30/10/24

LAB - 4

1Q) Develop a java program to create an abstract class name Shape that contains two integers and an empty method named printArea(). Provide three classes named Rectangle, Triangle and Circle such that each one of the classes extends the class Shape. Each one of the classes contain only the method printArea() that prints the area of the given shape.

```
abstract class Shape {
  protected int dimension1;
  protected int dimension2;

  public abstract void Area();
}
class Rectangle extends Shape {
  public Rectangle(int length, int width) {
    this.dimension1 = length;
    this.dimension2 = width; }
public void ~~print~~ Area(){
  int area = dimension1 * dimension2;
  System.out.print("Area of rectangle" + area); }}

class triangle extends Shape {
  public triangle(int base, int height){
    this.dim1 = base;
    this.dim2 = height; }
```

```
public void Area() {
double area = 0.5 * dim1 * dim2;
System.out.println("Area of triangle" + area); }}

class Circle extends Shape {
  public Circle (int radius) {
    this.dim1 = radius; }

public void Area () {
  double Area = Math.Pi * dim1 * dim2;
  System.out.println("Area of circle" + area); }}

public class ShapeTest {
  public class void main (String [] args) {
    Shape rectangle = new rectangle (5,3);
    rectangle.Area();
    Shape triangle = new triangle (4,6);
    triangle.Area();
    Shape circle = new circle (7);
    circle.Area(); }}
```

Output:

Area of rectangle : 15

Area of triangle : 12.0

Area of circle : 153.938